

Exploring Photosynthesis with NASA Remote Sensing Data

Lesson Parameter Hint Table

Lesson Parameters	Individual Effects on FPAR	Helpful Hints
SW Downward Flux (incoming sunlight)	<i>More sunlight</i> reaching the Earth's surface provides a greater potential for <i>higher</i> FPAR values.	When more incoming sunlight (within the photosynthetic range) is available to vegetation the chances of higher FPAR values exist. SW Downward Flux decrease with Higher Cloud Cover Percentages.
Precipitation	<i>Adequate precipitation</i> amounts aid vegetation in canopy processes resulting in <i>higher</i> FPAR values.	Sufficiently hydrated vegetation is more efficient at canopy processes, including the ability to absorb photosynthetically active radiation (FPAR).
Aerosol Optical Depth	<i>Larger Aerosol Optical Depth</i> values tend to result in <i>lower</i> FPAR values.	Aerosols in the atmosphere tend to absorb and block out incoming sunlight. The thicker the aerosol optical depth, the harder it is for sunlight to reach ground vegetation, directly decreasing FPAR values. Sometimes higher precipitation amounts can decrease Aerosol Optical Depth.
Cloud Coverage	<i>A larger percentage of Cloud Coverage</i> tends to result in a <i>lower</i> FPAR value.	Like aerosols, clouds block incoming sunlight, decreasing the possible amount of light available to reach ground vegetation. Resulting in a lower FPAR value. A higher percentage of Cloud Coverage decreases SW Downward Flux reaching the Earth's surface.